

Remarks

Entry of the amendments presented, and reconsideration and withdrawal of the claims objections and rejections are respectfully requested. Upon entrance of this amendment, claims 1, 3-5, 8-20 & 26-28 will remain pending, of which, claims 26-28 have been withdrawn. This paper represents Applicants' first opportunity to address the rejections stated in the final Office Action.

Claims 1, 8-10, 12 & 20 are amended herein to address each of the claim objections noted at pages 2-4 of the final Office Action. Specifically, claims 1 & 8 are amended to delete "in order", claims 8 & 20 are amended to spell out the EEPROM acronym, and claims 9, 10 & 12 are amended to delete "new or" (in claim 9) and "adding to or" (in claims 10 & 12), as suggested by the Examiner. Finally, claim 12 is amended to change the double quotations around the phrase *fully active* to single quotations for consistency in the claim as suggested. Based on these amendments, withdrawal of all claims objections is respectfully requested.

Substantively, claims 1 & 3-7 were rejected under 35 U.S.C. §103(a) as being unpatentable of Whitaker et al. (U.S. Patent NO. 6,298,425 B1; hereinafter Whitaker) further in view of Harris et al. (U.S. Patent No. 5,873,097; hereinafter Harris), while claims 8-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Whitaker in view of Harris, and further in view of Chan et al. (U.S. Patent No. 5,331,189; hereinafter Chan). Each of these rejections is respectfully, but most strenuously traversed to any extent deemed applicable to the amended claims presented herewith, and reconsideration thereof is requested.

By this paper, independent claims 1, 8 & 20 are amended to recite the subject matter of canceled dependent claims 6 & 7. This amendment is made to more clearly point out and distinctly claim certain aspects of the present invention.

Specifically, pursuant to Applicants' invention, data is stored in *a record oriented data structure* with each of the records containing, in addition to data contents, a first reference *indicating the current data-containing record of a previous file*, and a second reference *indicating the current data –containing record of a subsequent file*. More particularly, as amended, the claims specify that the first reference of each record includes a first pointer (PTR 1) which indicates the current data-containing record of a previous file and the second reference

of each record includes a further pointer (PTR 3) indicating the current data-containing record of a subsequent file. Additionally, the independent claims recite that a *third reference* of each record includes a second pointer (PTR 2) *indicating the current data-containing record of that file*. Applicants respectfully submit that at least these recitations patentably distinguish their recited technique over the applied art.

The final Office Action acknowledges that Whitaker does not explicitly disclose Applicants' recitation wherein each record contains, in addition to the data contents, a first reference indicating the current data-containing record of a previous file and a second reference indicating the current data-containing record of a subsequent file (and an update stage including employing the second references of the plurality of records, and for one atomic write stage employing the first references). Applicants agree. However, for an alleged teaching of these aspects of Applicants' invention, the final Office Action cites Harris.

Harris describes methods and data structures with permit information to be stored as objects in target containers and update containers. A target container defines a first state of the information, and update container, which can point to the target container, identifies changes to the information in the first state which would be sufficient to update the first information state to a second information state. Update containers may be nested to any depth. When an application program opens an update container, the procedure searches down the chain until it finds the ultimate target container. It then creates in-memory structures for providing access to the objects and value data represented in such container. The procedure then works its way back up the chain, performing the changes on the in-memory structure, which are called for in each of the update containers. New modifications made after this process is complete, are recorded in memory, and when committed, are written out into a new update container which references the container that the application program originally opened. The changes which are identified in an update container, if they represent modifications to an object in an underlying container, refer to that object logically rather than physically. Multiple concurrent parallel updaters are supported, since more than one update container can refer to the same target container. Thus, each updater has an independent view of the information being updated. The mechanism facilitates reconciliation of current updates since it maintains a record of the changes made. (See Abstract of Harris.)

As amended, Applicants independent claims recite the existence of three references within each record oriented data structure containing the data contents. These three references are referred to as three pointers. This aspect of Applicants' invention was previously recited in canceled claims 6 & 7. Regarding this aspect, the final Office Action cited in part, column 34, lines 32-64 of Harris. This material teaches:

The TOC control block points to another data structure not shown here to keep the drawings simple. It is a set of three head/tail list pointers to doubly linked lists of the TOCObjects(s). The three lists are for all the objects, property objects and type objects in the container. Thus the type and property lists are subsets of the object list. These lists are only just for the CMGetNestxxx() routines. These lists are kept as part of the TOC since, there can be only one TOC and of these list sets. Note that for updating, there can be multiple containers using the same TOC, so putting these data structures here is the most convenient way to deal with them during updating.

Note, that since there can be multiple users of a TOC, a TOC requires a "use count" to prevent premature release of the TOC.

The lowest level of the TOC index tables 418 contain pointer to the container objects themselves instead of to other index tables. These objects are TOCObjects 420. The TOC entries for an object are linked off of their TOCObject. TOCObjects are returned to the user as object refNums (CMObject, CMType, and CMPorperty).

The properties, TOCProperites 422, for an TOCObject are contained on a doubly linked list off the TOCObject. The values for each poperty are on a doubly linked list of value headers, TOCValueHdrs 424, off of each TOCProperty. Finally, a specif real (as opposed to dynamic) value, such as one of the tOCValues 426, is linked to its TOCValueHdr.

The reason the values are lined to a value header is because of continued (multi-segment) values. A multi-segment value can have more than one value entry. Hence the chain. Also, it is pointers to value headers that are returned to the users as value refNums (CMValue).

As taught above, the table of contents control (TOC) block in Harris *points to another data structure not shown here to keep the drawings simple. It is a set of three head/tail list pointers to doubly linked lists of the TOCObjects. The three lists are for all of the objects, property objects and type objects in the container.* This clearly is a different teaching from the characterizations recited by Applicants in the independent claims presented.

Notwithstanding that Harris describes the existence of three head/tail list pointers, the pointers are performing a different function than the three pointers recited by Applicants. In Harris, the three pointers point to three doubly linked lists, that is, a list of all the objects, a list of property objects, and a list of type objects in the container.

In contrast, Applicants' independent claims recite that the record oriented data structure, containing the data contents, includes a first pointer *indicating the current data-containing record of a previous file*, another pointer (PTR 3) *indicating the current data-containing record of a subsequent file*, and a second pointer (PTR 2) *indicating the current data-containing record of that file*. It is respectfully submitted that a careful reading of Harris (and the other applied art) fails to teach or suggest at least such a third pointer, *which indicates a current data-containing record of that file*. Again, in accordance with Applicants' invention, each data-containing record, which contains the data contents, includes the three pointers specified. There is no discussion in Harris of a reference or pointer that references the current data-containing record of a given file.

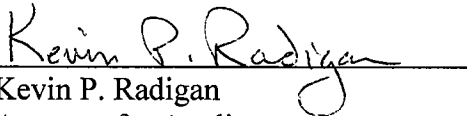
To summarize, Applicants respectfully submit that the three head/tail list pointers in Harris are three pointers which are employed *for different purpose* than that recited in Applicants' independent claims. The three head/tail list pointers in Harris point to three different types of lists. *Further, a careful reading of Harris fails to uncover any teaching or suggestion that these three head/tail list pointers are contained within each data record, as recited in Applicants' invention.* Additionally, a careful reading of Harris fails to uncover any teaching or suggestion that a third reference (PTR 2) which indicates the current data-containing record of that file. This functionality is believed unique to Applicants' invention and renders patentability to the recited methods and systems. *The three head/tail list pointer in Harris clearly point to different lists of objects and would not equate to a record oriented data structure wherein each record containing data contents includes the three pointers specified by Applicants, one of which indicates the current data-containing record of that file.*

For at least the above-noted reasons, Applicants respectfully submit that the independent claims presented herewith patentably distinguish over Whitaker and Harris. With respect to independent claims 8 & 20, Applicants note that Chan is further added to the combination of Whitaker and Harris for allegedly teaching Applicants' recited invention. Chan is cited for teaching that Applicants' recited non-volatile storage is an EEPROM. Without acquiescing to this characterization of Chan, Applicants respectfully submit that a careful reading thereof fails to teach the above-noted deficiencies of Whitaker and Harris when applied against the claims presented.

Applicants respectfully submit that all claims are in condition for allowance, and such action is requested.

Should any issue remain unresolved, however, Applicants' undersigned representative again requests a telephone interview with the Examiner to further discuss the matter in the hope of advancing prosecution of the subject application.

Respectfully submitted,


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